STAT F621: Distribution-Free Statistics, Fall 2011

MWF 2:15–3:15 Gruening 308

Instructor: Zepu Zhang.

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Office Hours: MWF 4:00–5:00; or by appointment.

Textbook: *Practical Nonparametric Statistics*, by W. J. Conover, 3rd ed, 1999.

Blackboard: A course Blackboard site has been set up. You may use it to access homework assignments, solutions, and check your grades. Various other materials will be posted there as well either before or after the pertinent lecture.

Be sure to check the "Announcement" once you have logged into the course website. Newly posted or updated materials are usually announced there.

Goals and expected learning outcomes: Methods for distribution-free (nonparametric) statistical estimation and testing. These methods apply to many practical situations including small samples and non-Gaussian error structures. This course focuses on the more "classical" of these methods, making heavy use of binomial distribution, χ^2 distribution, ranks, etc. The methods will be presented and illustrated using a variety of applications and data sets.

Prerequisites: STAT F200X [STAT S273-J].

Computing: The amount of computation in the homework justifies using a computer package. You will deal with a lot of data manipulation especially ordering numbers, finding out the rank of each element in a data set, and such. Other than that you will need to do some routine math operations such as squaring, adding things up, etc. You may also want to use functions related to standard distributions such as the normal distribution and χ^2 distribution. Such functions are more convenient than traditional table look-up. (But you still need to know how to use the tables.)

We will use `R` in this course. Help on `R` in lectures will be offered on an as-needed basis. Some materials are posted on Blackboard to help you get started with `R`.

Homework: Reading relevant sections of the textbook both before and after the lecture will be very helpful to your understanding. Take the reading as assignment and finish it in a timely manner.

Homework due dates are listed in the tentative "schedule". Homework should be submitted in class or into the instructor's mail box in Chapman 101. To avoid being late due to Chapman building closure, play it safe and turn it in by 4pm.

Late homework will not be accepted in general. Exceptions are made on a case-by-case basis by the instructor and typically are made only for documented health or university-sponsored activities.

Homework guidelines

(Some of the following guidelines also apply to exams.)

1. Presentation counts.

(a) You should work out the problems first on scratch paper, then copy down your answers in a clean, organized way.

(b) Prepare your final answer on a computer and print it out.

(c) If you must hand-write your homework, make sure you copy down worked answers in a clean, neat, orderly form. Avoid the freedom of having chunks of things floating around. Do it as if you are using a computer so that the content has to flow from top to bottom. Highlight key answers in boxes.

(d) Do not shuffle the problems.

(e) Messy presentation, as determined by the grader, may cost you partial credit.
Incomplete or unclear writing (referring to the flow of ideas rather than the strokes), as determined by the grader, may cost you partial credit.

2. Show your work! Include the right amount of detail:

(a) When you use a formula, always show the general formula (with math symbols) before plugging in actual numbers.

(b) After you have plugged in numbers, be concise with routine arithmetic.

(c) Include important middle steps, formulas, intermediate quantities.

(d) Lack of important middle steps will cost you partial or whole credit.

3. Turn in hard copies only. Remember to number the pages and use a stapler.

Exams: There will be a take-home midterm exam and a final project and presentation as final exam.

Overall grade: Your final grade will be calculated based on the following proportions:

Homework	50%
Midterm	20%
Final	30%

Grading scale:

A (outstanding)	90–100
B (good)	80–89.99
C (satisfactory)	60–79.99
F (failure)	0–59.99

All homework assignments may not be worth the same points due to their difference in work-load and difficulty.

Ethics: Studying together, and getting study assistance from a tutor, is allowed and encouraged. Copying someone else's work and representing it as your own is plagiarism. Plagiarism and other forms of cheating in homework and exams may result in a 0 (zero) score for the homework/exam involved.

Please read "Student Code of Conduct" and policies of the Department of Math and Stats at www.dms.uaf.edu/dms/Policies.html. (The "Code of Conduct" used to be in the "Class Schedule". Now that the schedule has gone digital, I could not find a link to the complete "Code".)

Disability Services: If you have a physical handicap or learning disability, please make me and the Office of Disabilities Services (474-5655) aware of the situation so that reasonable accommodations can be made.

Withdrawal: I may withdraw any student from class who (1) misses an exam without a valid reason OR (2) misses two homework assignments.